

WHAT IS CLAIMED IS:

1. An inner panel comprising:
an opening to which a loudspeaker unit is attached;
5 a volume unit in which the loudspeaker unit is housed from the
opening to form a closed space; and
a groove passing through to the volume unit.
2. The inner panel according to claim 1, wherein the groove is covered
10 with a lid such that an end portion of the groove is open.
3. The inner panel according to claim 2, wherein a fixing unit for
fixing a wire harness of the loudspeaker unit is attached to the lid.
- 15 4. A loudspeaker apparatus in which a loudspeaker unit is attached
to an inner panel, wherein
the inner panel comprises:
an opening to which the loudspeaker unit is attached;
a volume unit in which the loudspeaker unit is housed from the
20 opening to form a closed space; and
a groove passing through to the volume unit,
the loudspeaker unit is housed in the volume unit, and
a rear space of the loudspeaker unit in the volume unit is used as
an acoustic volume unit of the loudspeaker unit.
- 25 5. The loudspeaker apparatus according to claim 4, wherein the
groove is covered with a lid such that an end portion of the groove is open.

6. The loudspeaker apparatus according to claim 5, wherein a frame portion of the loudspeaker unit puts a lid such that the end portion is open.

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7. The loudspeaker apparatus according to claim 5, wherein a Helmholtz resonance is generated by an acoustic mass constituted by an inner space of the groove and a volume held by the acoustic volume unit.

10 8. The loudspeaker apparatus according to claim 6, wherein a Helmholtz resonance is generated by an acoustic mass constituted by an inner space of the groove and a volume held by the acoustic volume unit.

9. The loudspeaker apparatus according to claim 5, wherein a fixing
15 unit for fixing a wire harness of the loudspeaker unit is attached to the lid.

10. The loudspeaker apparatus according to claim 6, wherein a fixing unit for fixing a wire harness of the loudspeaker unit is attached to the lid.

20 11. The loudspeaker apparatus according to claim 7, wherein a fixing unit for fixing a wire harness of the loudspeaker unit is attached to the lid.

12. The loudspeaker apparatus according to claim 8, wherein a fixing unit for fixing a wire harness of the loudspeaker unit is attached to the lid.

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